

# "Retroformance"

By **Rob Fortier**

It's one thing knowing you've got a quality part to work with—but it's even better when that quality part's already been tested and tuned before it wound up in your hands. And that's exactly the case with SO-MO Speed Shop's Widow Maker induction systems, as they run their kits on a test engine prior to shipping, ensuring each and every component performs above standard.

Obviously, the small-block Chevy setup we're working with is meant to be used on pre-'87 engines—but the actual engine we got happened to be a '93 5.7L purchased from a local, reputable salvage yard (and came with a 700-R4, both with limited warranties). So, while updating the intake manifold was not an option, going backward with the heads was, even if we were going backward in technological terms in doing so—in more ways than one, as a trio of two-barrel carburetors pales in comparison to modern fuel injection. In this particular case, updating performance is not the name of the game—it's all about "retroformance"!

After stripping the engine down to a short-block, the center-bolt



## The Widow Maker's Made ... Now It's Time To Put Her To Work



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This low-mileage TBI small-block that once served duty under the hood of a '90s fullsize will soon be shed of the majority of its late-model mechanical identity, all giving way for yesterday's technology, so to speak. The 5.7L also came with a good 700-R4—a reasonably priced package backed by a limited warranty.

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cylinder heads were exchanged for a set of earlier standard cast-iron ones with closely matched chamber/valve size from nearby Magnolia Machine. With the 350 all cleaned, freeze plugs and seals replaced, etc., the new-old heads were installed and the now long-block painted the desired color. Engine painting's

no science, but there are various ways to go about it; just depends on how nice you want it to look, and more importantly, how long you want that nice look to last. Thorough stripping/de-greasing is a must, and so too is using the right materials, namely the type of paint—garden-variety rattle can spray paint won't hold up nearly as long as the proper high-temp paint.

That was the hard part—and the dirtiest and most time-



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Gone are the high-swirl center-bolt cylinder heads to make room for a set of pre-'87 standard cast-iron heads. Note that neither the base engine nor the new (old) heads are performance-oriented to begin with—if we were looking to achieve big numbers, we wouldn't have chosen either in the first place. This will be good, reliable, and as efficient an engine as can be.



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Heads installed and valvetrain initially dialed in, it's time to pre-fit the intake system. One thing about this particular engine that we learned (were told) was that despite having an external fuel pump provision, there is no internal provision to run a mechanical pump—which won't pose a problem since an electric fuel pump will be used.

consuming. The rest, thanks to SO-MO Speed Shop, is a piece of cake.

Literally, the complete intake system can be removed from the box it came in, installed on your engine, and be up and running in no time. In the past, this was definitely not the case, but with a pre-assembled, pre-tested, pre-tuned setup, all the tough stuff has already been done for you. However, that said, you will

need to spend a little time with the fuel lines (routing, bending, etc.), probably the only thing SO-MO doesn't do, and for obvious reasons, as there are too many variables involved for a standard configuration to accommodate. Ultimately, it's a very small task compared to setting up the linkage or dialing in the carbs, right?

So with that, let's slap this baby on once and for all, bend up some fuel lines, and call it a day. *Ree*



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If you were wondering what was meant by "pre-fitting", when you're dealing with aluminum intake manifolds and aluminum valve covers, there can be issues with clearance. So before you go gluing any gaskets or squeezing any silicone ...

### Sources

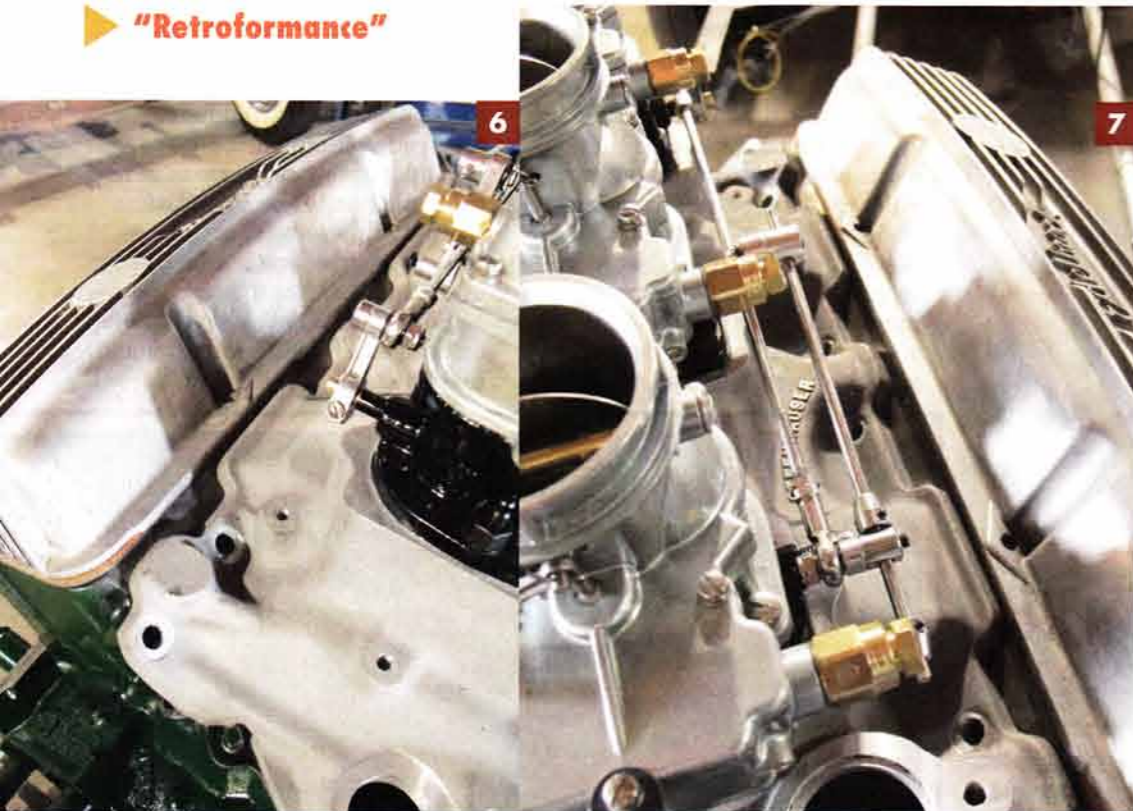
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... make sure there'll be no interference between either component. If you look closely, you can see that had it not been for someone previously notching the inner lips of the valve covers, the thicker intake runner flanges on the Offy manifold wouldn't have cleared.

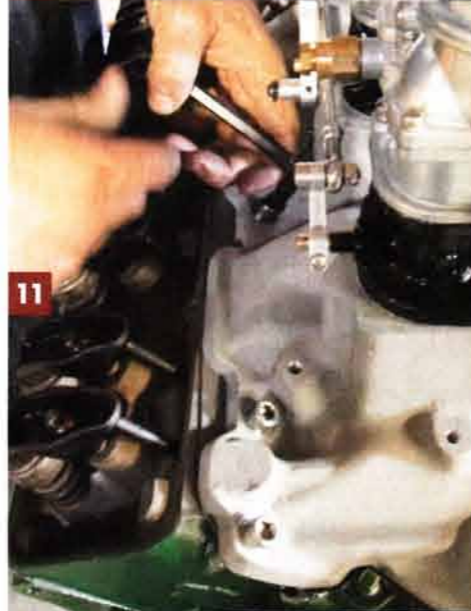


With the clearances all cleared, the sealing could finally begin. Rather than using cork or rubber front and rear seals, a nice big bead of silicone was laid on the block from head to head. Normally, this prevents leaks better, as the seals sometimes have a tendency to get pushed out when the manifold is tightened down.



And as with the previous process, there's more than one way to skin a cat when it comes to intake manifold gaskets. In our case, the gaskets were first attached to the head with Gsgacinch, then a dab of silicone at each corner between the block and head, before the intake was dropped in place (no dressing on top side of gasket).

When installing the manifold bolts (socket head Allens in this case), silicone was applied to all the ones that enter water passages. With this particular intake manifold, due to its thicker construction, standard hex bolts will not work, thus the use of Allens—ARP bolts, with their smaller head, will work too, but as far as appearance, don't go too well with the vintage look.



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Now that the manifold's in place with the Strombergs all set up and ready to go, all that's left now is to install the fuel lines, brass fuel log, glass bowl filter, and pressure gauge. SO-MO provides compression fittings with their fuel supply systems, so no tube flaring is necessary.



First we needed to figure out the overall configuration of the fuel lines. Things taken into consideration: linkage clearance, manifold/valve cover clearance, and what direction the fuel supply would route.

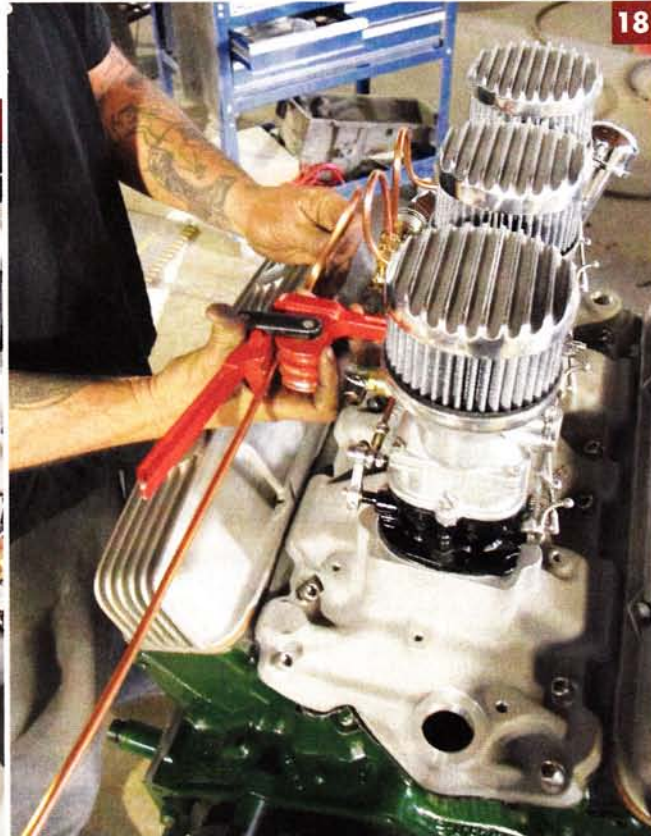


Here's an example of how SO-MO did the fuel lines on a Caddy 2x2 Widow Maker. Note that the lines feeding the carburetors run up vertically from the log before turning into the fuel inlets rather than being a straight shot over as with other types of supply setups.



Even though an electric fuel pump will be used, which would normally give the option of running the fuel lines toward the front or the back of the engine, with oil filler tube combined with the tighter confines dictated by the progressive linkage, going backward was really our only option.

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**18** And unlike the aforementioned Caddy setup, the addition of a third carburetor posed a small challenge with routing the rear fuel line in a similar fashion as the front and center lines. More than likely, the overall configuration will be changed once the engine's in the vehicle and we have a better idea of how the surroundings (firewall mainly) will apply.



**19** Throughout the entire fuel line process, one thing we constantly checked was that there was absolutely no interference with the linkage—period. Ample room was left so that the throttle arms would have full range of travel.



**20** And there you have it. Now all that remains to be done is install the ignition and various engine accessories—oh, that and finish the vehicle it's going in ...